Audélor

European Deep Sea Fisheries – Feasibility assessment Report

Strictly Private and Confidential
Draft

February 19th 2013

pwc

FISH-PASS

About this Report

As per our engagement letter dated end of January 2013, this report contains a description of the perimeter of the potential Socio Economic Study to be conducted in Phase 2, an overview of available data and a first analysis of the quality of data.

The document has been prepared by PricewaterhouseCoopers Entreprises en in France and Fish-Pass for AUDELOR. It has been prepared exclusively for AUDELOR according to our Engagement Letter of January 2013.

PwC does not admit any liability regarding actions that third parties might take based on this document.

Quality of data and perimeter of our analysis

Perimeter of our analysis

limited extensive

We have adopted a top down approach to cover major countries that may be impacted by the proposed regulation. Because of the very short period of time available we have decided to cover a limited number of countries in the first phase of our study.
We have also decided to include figures and analysis for countries that are not members of the European Commission but may also be impacted indirectly by this regulation.

Availability of key contacts

limited extensive

Because of the very short period of time available and because several key market players were also collecting data in the meantime to prepare qualified response to the proposal, we had many difficulties to be in contact with the relevant persons mostly in Spain.

Access to data

limited extensive

At this stage we have been focusing on available information from halieutic side and not so much from socio economic side, because of the lack of time and also the difficulty to determine the complete geography and perimeter of the value chain from capture to transformation of deep-sea species in several countries. Mostly Spain and Portugal.

Quality of data

limited extensive

In the process to reconcile key data collected during interviews and analysis, we have experienced several difficulties. Very strong discrepancies or significant gaps between Eurostat data and data collected from local sources. Surprising evolutions in comparing Eurostat data from one year to another. Mostly 2010 figures for captures and landings.

Executive summary

See slides 3 and 25	**Globally, half of the quota is fished in North East Atlantic but hidden by-side effects (quotas exchanges) have to be taken into account.** **Catches have decreased at the beginning of the last decade.** **The decrease was especially strong for Roundnose Grenadier. But from 2006 the catches have been stable.**
See slides 4 and 5	**Iceland and Norway have a relatively stable catch of deep sea species , but at a much higher level that the individual EU member-states.**
See slides 9 and following	**Very different situations in various countries with landing and catches figures that may vary significantly from one country to another and from one period to another**
See slide 28	**A significant remaining effort to be able to produce a socio economic impact analysis as the one prepared in Lorient few months ago.** **We identified the experts to be sollicitated and assessed the work feasable.**

Agenda

Section 1
Deep Sea Fisheries

1. Overview
2. Main countries at a glance

Overview

1.1

From fishing rights to catches – what could be the impact of the regulation

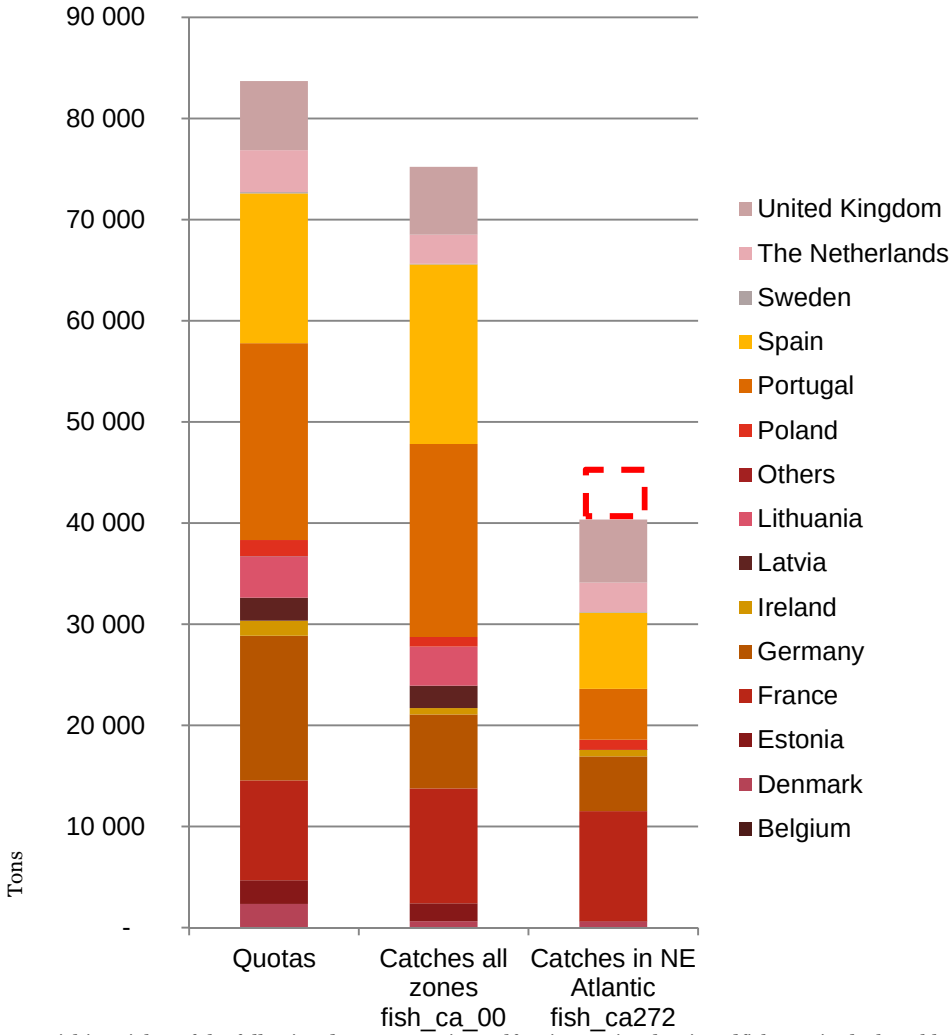
In European waters, quotas dedicated to deep sea species can be found in three regulatory sources in 2013. From what we can observe for the year 2010, if this year can be considered as representative, EU countries captures represent half of the available quotas. A main reason for that is that significant quantities of ling, blue-ling and tusk in the UK EEZ is "sold" to Norway in order to "pay for" other species, i.e. North Artic cod.

When analyzed species by species, we observe that France, Poland, Spain and United Kingdom catch more than the quotas given, which indicates that exchanges ("swaps") are taking place among the member states. The total exchanges would approximately amount to 4400 tons.

The regulation would not only impact the 40 000 tons harvested, but also the ability of the EU to exchange deep-sea species with demersal species (as cod and haddock) in the yearly quota-negotiation with Norway.

Globally, half of the quota is fished in North East Atlantic but hidden by-side effects (quotas exchanges) have to be taken into account.

NB: France fishing zone is essentially in North East Atlantic but for Portugal (15 MT of black scabbardfish) and eastern countries (8 MT) fishing zones are outside of the North East Atlantic.



Fishing rights of the following deep sea species : Alfonsinos nei, Atlantic redfishes nei, Black scabbardfish, Blackspot(=red) seabream, Blue ling, Deep-water sharks nei, Greater argentine, Greater forkbeard, Greenland Halibut, Ling, Roundnose grenadier, Tusk(=Cusk) in 2010. They are based on regulations 23/2010 & 1359/2008. Catches are based on the same species, source Eurostat fish_ca_atl272 data.

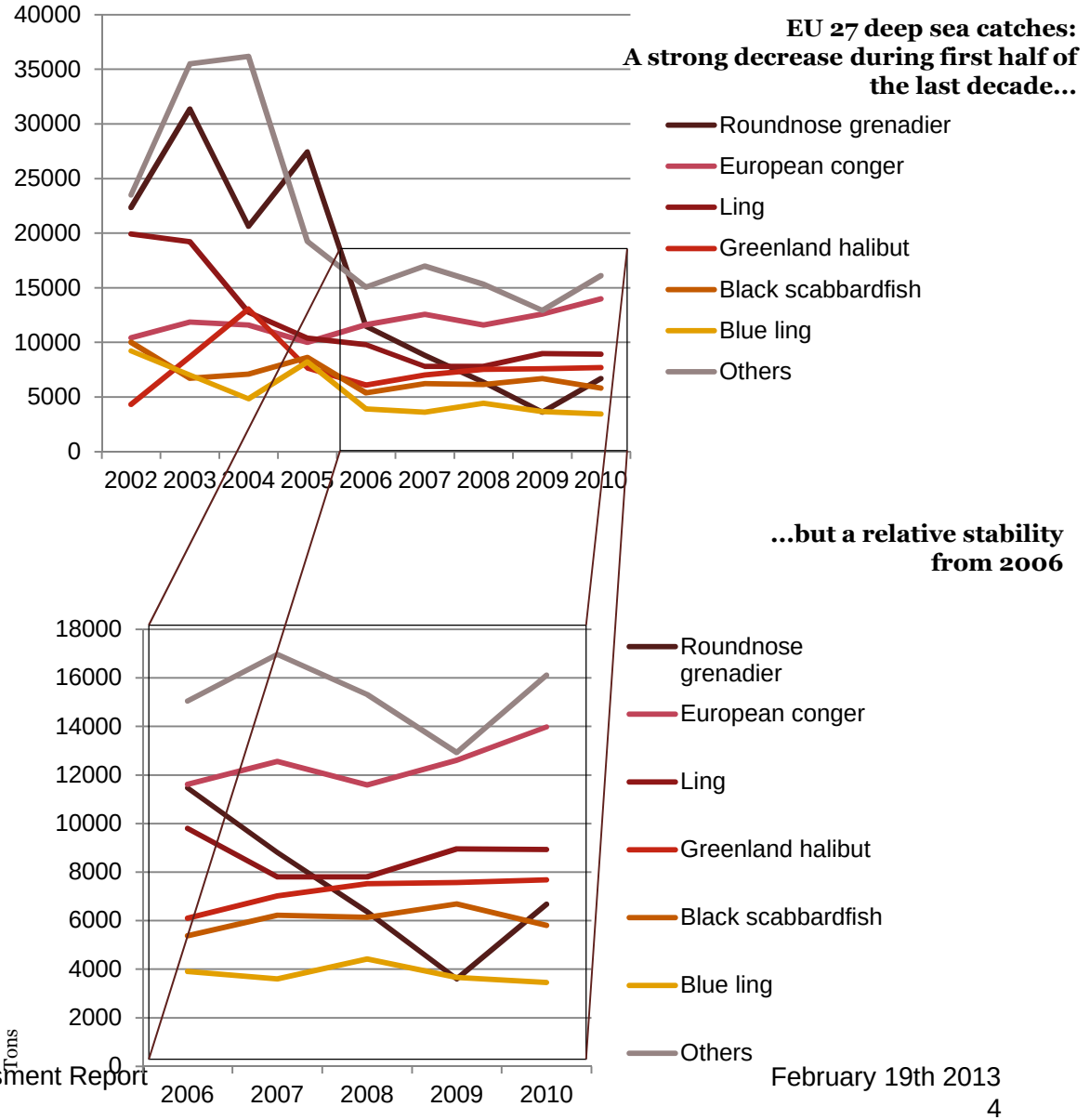
Evolution during the last decade

Catches have decreased at the beginning of the last decade.

The decrease was especially strong for Roundnose Grenadier. But from 2006 the catches have been stable.

Several species catches are stable since 2004, such as Black Scabbardfish, Greenland Halibut and European Conger.

This last one can be caught at deep sea ranges, but is not recognised by professionals as a mere deep sea specy (as it can be found ashore).



Source Eurostat fish_ca_atl272

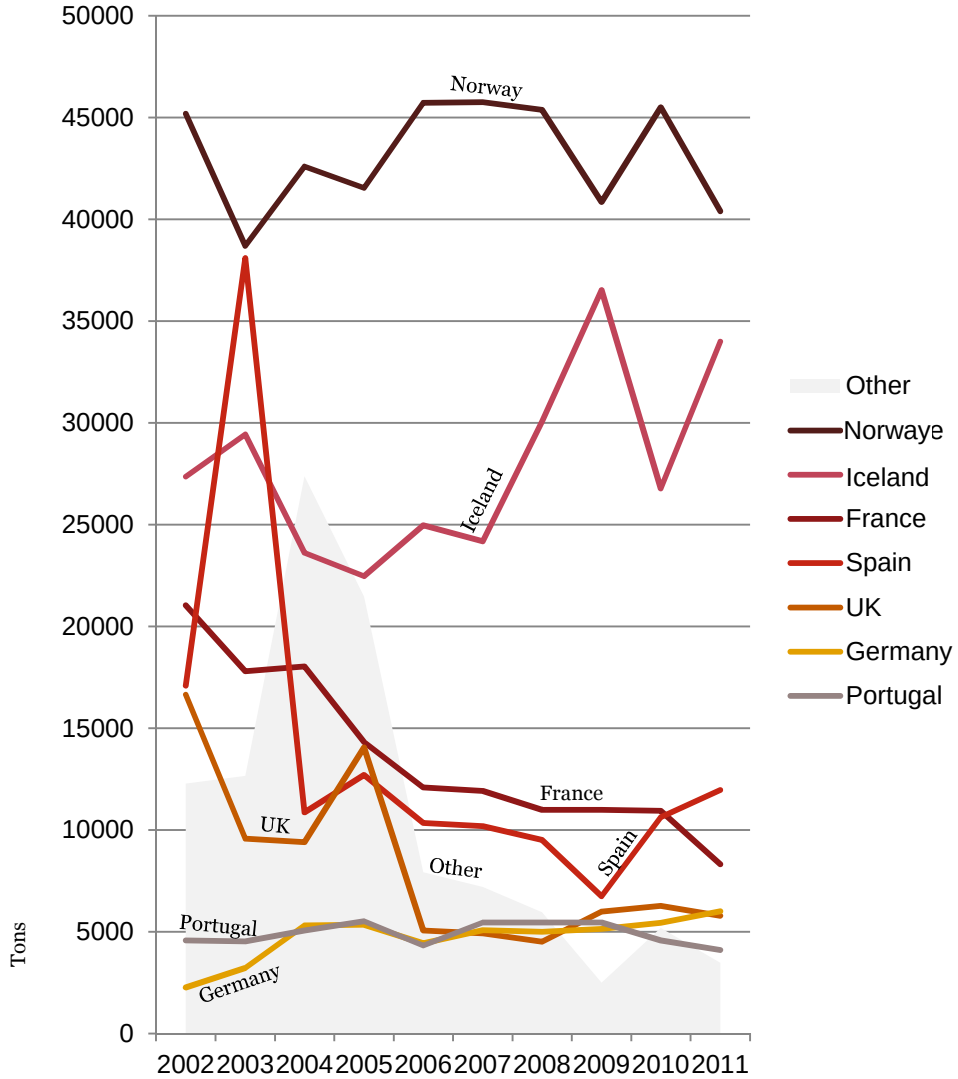
What was the EU 27 effort compared to neighbours

What can be observed in several European countries is a decrease of catches in the first half of the last decade, and a level of catches which remained stable for the second half of the decade. The efforts where mainly supported by UK and French vessels, the 2003 peak for Spain being explained by 18 Mt of Roundnose Grenadier and 9 Mt of Ling.

Iceland and Norway have a relatively stable catch of deep sea species , but at a much higher level that the individual EU member-states.

Iceland is an acceding member to the EU and a restrictive EU-regulation for theses species will we part of the *"Acquis commaunautaire"* that Iceland shall take over.

Combined, other countries such as Iceland and Norway have the same level of catches than the ones of the whole EU at the beginning of the period but do not exhibit any decreasing trend afterwards.



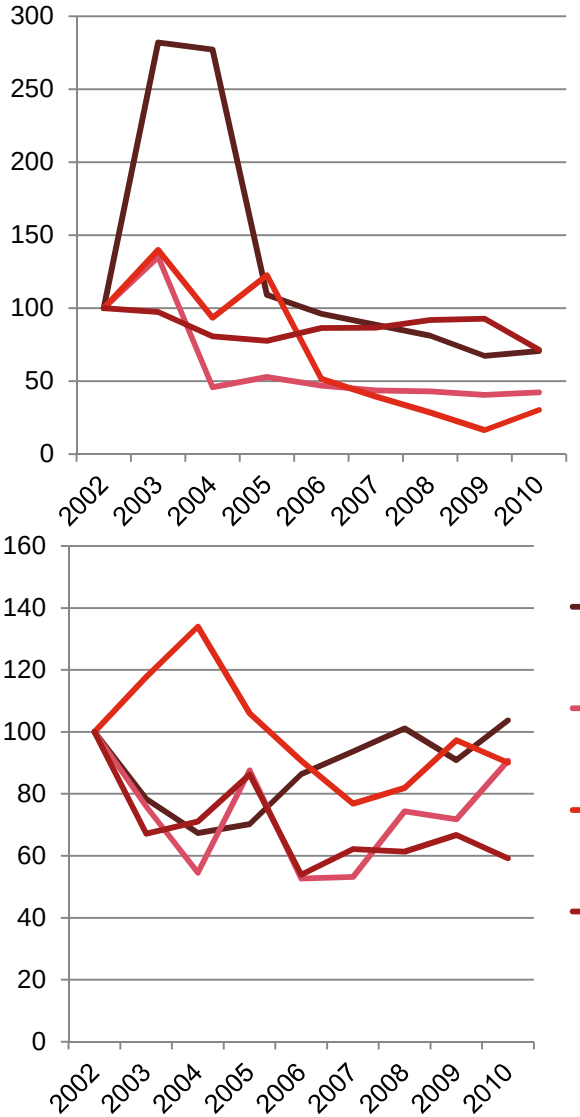
Source Eurostat fish_ca_atl272

Evolutions may differ by species

Analyzing detailed EEE landings statistics, different species groups can be observed: after the common 2004 peak, Grenadier is slightly decreasing when Greenland Halibut compensates this trend, which can explain that the average is stable in the last 5 years.

The data concerning EU27 only present similar trends, with a notable exception concerning Greenland Halibut (index is stable between 150 and 200 since 2006).

Index -Trends of landings by specy (Espace économique européen (EEE) (UE-27 plus IS, LI, NO), base 100 2002)



Landings 2010 / species	
Béryx nca - Beryx spp	108 T
Phycis de fond - Phycis blennoides	2 277 T
Grenadier de roche - Coryphaenoides rupestris	8 837 T
Lingue - Molva molva	27 176 T
Sub TOTAL	**36 234 T**
Brosme - Brosme brosme	21 971 T
Lingue bleue - Molva dypterygia	6 068 T
Flétan noir - Reinhardtius hippoglossoides	25 312 T
Sabre noir - Aphanopus carbo	6 224 T
Sub TOTAL	**70 263 T**

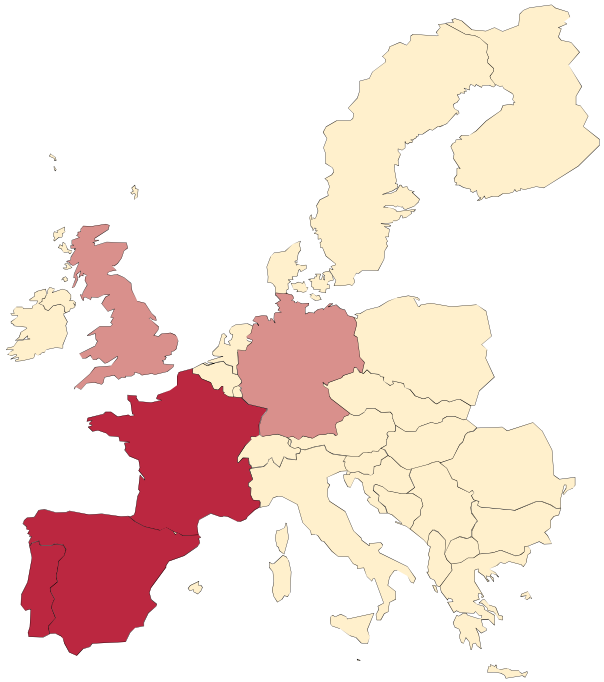
Source Eurostat fish_ca_atl272

Main countries at a glance

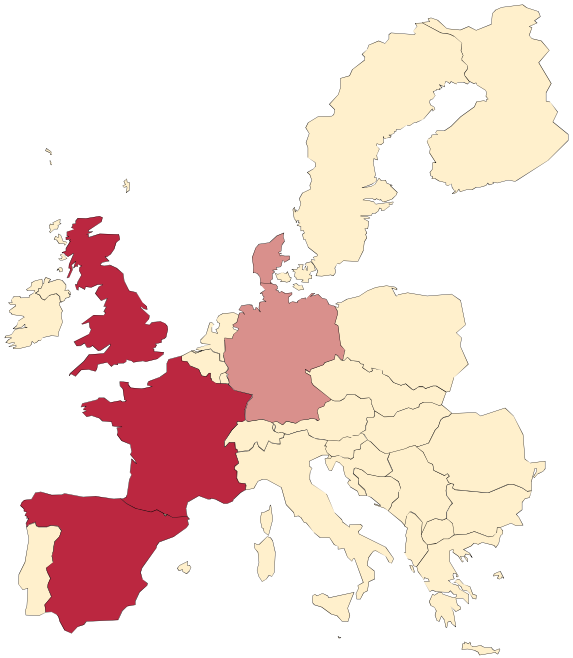
1.2

From catches to landings

Top 5 Harvesters
Excluding Norway and Iceland



Top 5 Landing countries
Excluding Norway and Iceland



Source Eurostat fish_ca_atl272

French deep sea fisheries at a glance (1/3)

In the end of 2011, 32 vessels from 24 to 46 meters had a licence (PPS) to aim at deep sea species. Since then at least one vessel shall be out of fleet (Jack Abry grounded on the Irish coasts).

The landings are mainly significant in the Lorient Port. The fact that vessels have licences does not necessarily means they use tem.

In Lorient, a local ship-owners sells its product which is mainly landed in advanced bases, and some Spanish netters also lands ling that is further transported to Spain.

The deep sea products industry is structured between the two major places (Lorient and Boulogne, which sometimes communicate to optimize the use of landed products).

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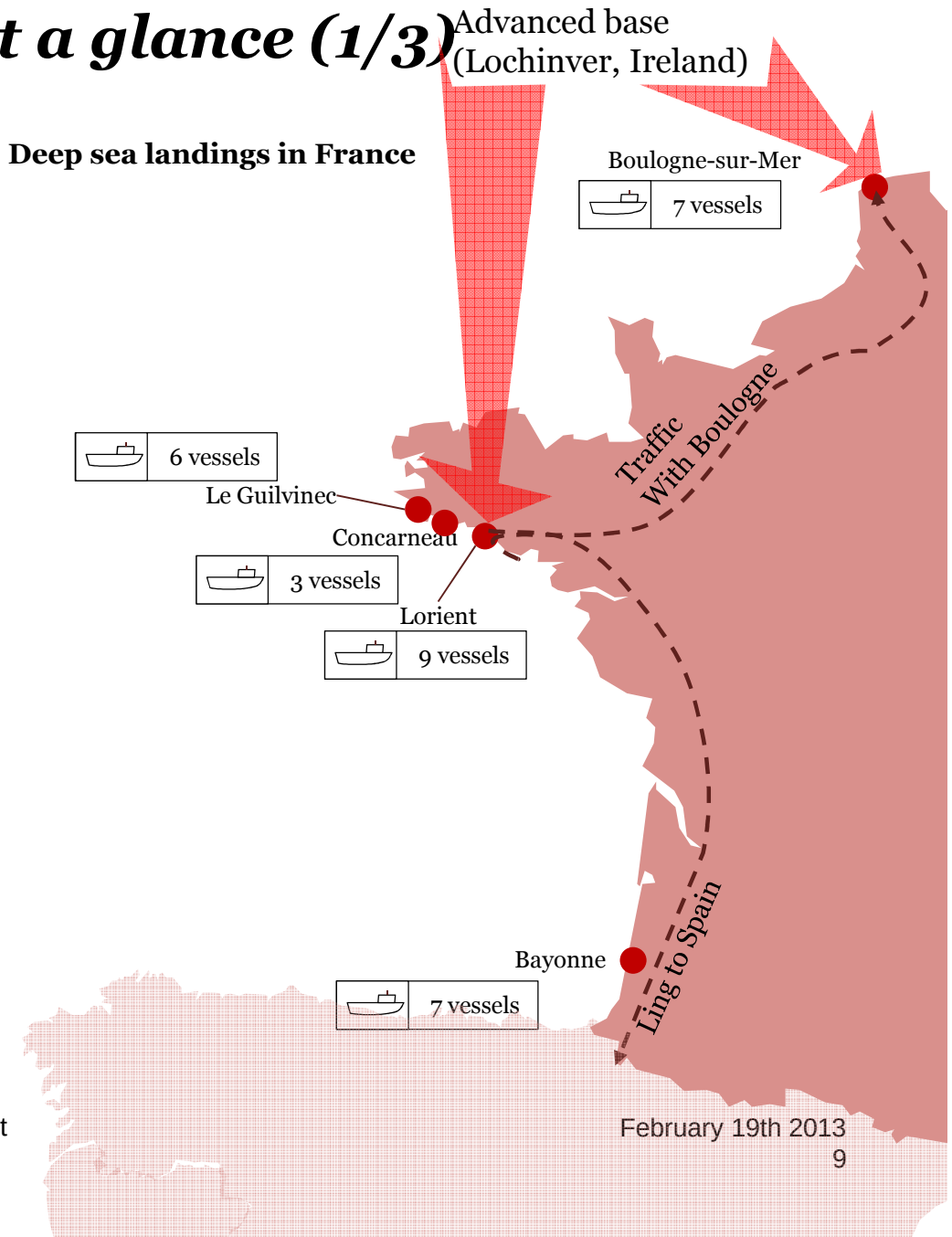


French deep sea fisheries at a glance (2/3)

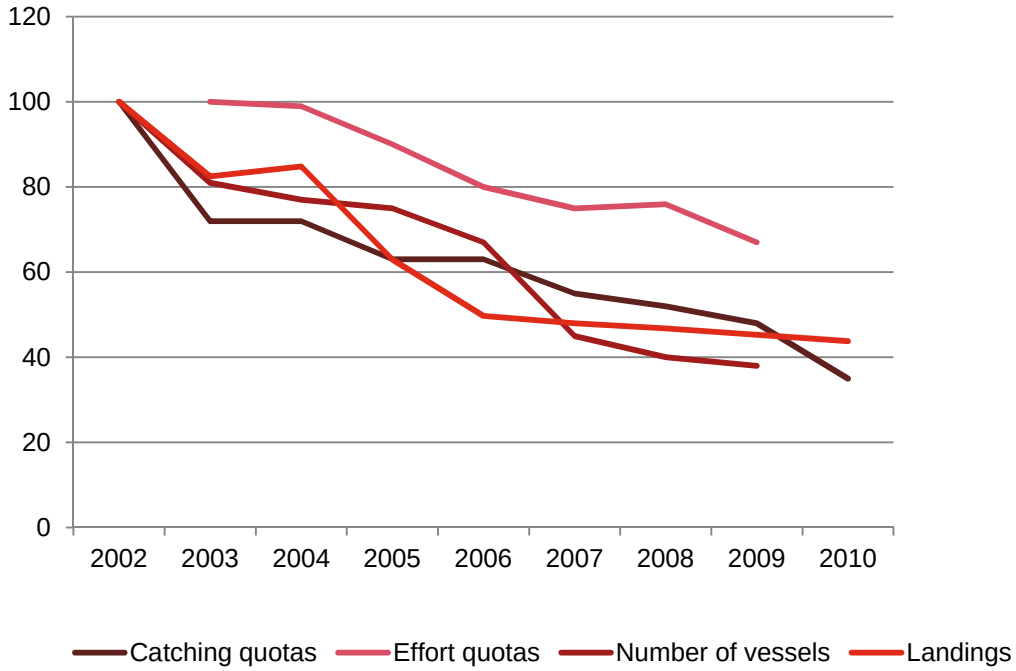
French fleet specialised in deep sea fisheries decreased strongly since the new regulation system in 2002. The regulation seems effective : the final catches / landings follow the trends of the fishing fleet size, effort quotas and fishing rights.

Landings in France between 2007 and 2011 (French and non French vessels)

Species	2007	2008	2009	2010	2011
Lingue bleue - Molva dypterygia	729	445	2 375	1 518.5	390
Sébaste chèvre - Helicolenus dactylopteru	48	47	156	124.7	24
Sabre noir - Aphanopus carbo	380	439	2 294	1 381.9	413
Phycis de fond - Phycis blennoides	273	278	489	339.3	215
Flétan noir - Reinhardtius hippoglossoides	31	43	124	146.3	11
Lingue - Molva molva	2 247	2 417	2 352	2 669.6	3 275
Grenadier de roche - Coryphaenoides rupestris	577	483	2 128	1 438.3	428
TOTAL	**4 285**	**4 152**	**9 918**	**7 618**	**4 756**

Source: Eurostat fish_ca_atl272

• Catching quotas (Blue ling, Black Scabbardfish, Emperor and Grenadier)
• Fishing effort quotas
• Number of vessels landing more than 10 tons per year since 2002



Source Euronor and Eurostat fish_ca_atl272

French deep sea fisheries at a glance (3/3)

Lorient

Seafood sector generates 3000 direct jobs in Lorient. 1/3 of the fish sold at Lorient is supplied by deep sea vessels.

Lorient is the most important fishing port in Brittany, and the stopping of the deep sea activity would have significant impact on the port further, the seafood sector in whole Southern Brittany.

A job on board of the fleet induces between 4 to 5 jobs on land. This high coefficient is consistent with the high level of capitalistic intensity in the value chain.

Moreover, the presence of the seafood processing firms in Lorient is strongly linked to local skills and market. The stopping of the supply would make them reconsider the choice of the implantation, Lorient being in a peninsula and out of flows crossing Europe.

Boulogne and other ports involved

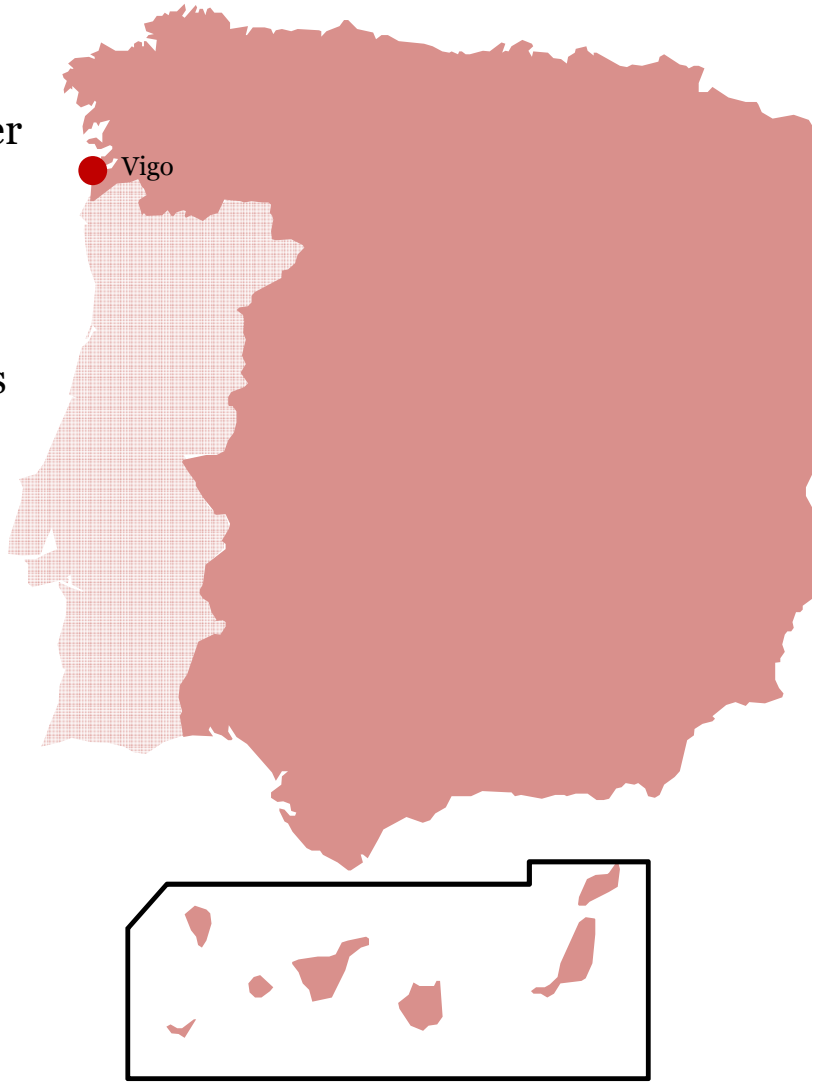
Value and quantity landed in Boulogne and other ports involved in deep sea fisheries is less important thant in Lorient, but still weights for 1 € out of 10 and 1 kg out of 14 in Boulogne.

In le Guilvinec the part of deep sea fish landed is not significant (around 1-2%), and in Concarneau was like Boulogne around 5 – 10%.

As there is very little data easily accessible between catching sector and processing sector, the impacts in the processing / transport / distributing sector have to be quantified on field study. Such data is not available today for those ports, and would have to be collected in order to have an estimate of the impacts of a restrictive regulation on deep sea fisheries.

Spanish deep sea fisheries at a glance (1/2)

Spanish fisheries regarding deep sea species are not clearly identified, would it be targeted (international waters and other seas) or bycatch < 200 m.
From interviews, for Greenland Halibut, in 2005 the **35 Spanish Freezer vessels** were owned by 20 harvesting companies. Apart from Greenland halibut the Spanish fleet also catches incidental species both in NAFO waters as well as in other fishing zones such as Hatton bank, Irminger, Svalbard, Greenland, Southwest Atlantic, ...
29 spanish trawlers fished discontinuously around the hatton bank in 1000 – 1400 meters deepnesses



Species	2006	2007	2008	2009	2010	2011
Alépocéphale de Baird – Baird's slickhead	474	108	869	709	766	705
Lingue bleue – Blue ling	183	124	716	380	410	443
Sébaste chèvre – Blackbelly Rosefish	1 675	2 481	1 590	1 940	3 461	4 042
Sabre noir – Blackscabard fish	220	138	140	218	419	356
Phycis de fond – Greater Forkbeard	1 453	1 202	819	1 073	1 389	1 506
Flétan noir – Greenland Halibut	9 871	4 765	5 200	5 900	6 551	6 846
Lingue – Ling	2 687	755	592	901	615	901
Grenadier de roche – Roundnose Grenadier	2 373	2 438	1 920	1 561	3 949	4 727
TOTAL Landings in tons	**18 936**	**12 011**	**11 846**	**12 682**	**17 560**	**19 526**

Source: Eurostat fish_ca_atl272

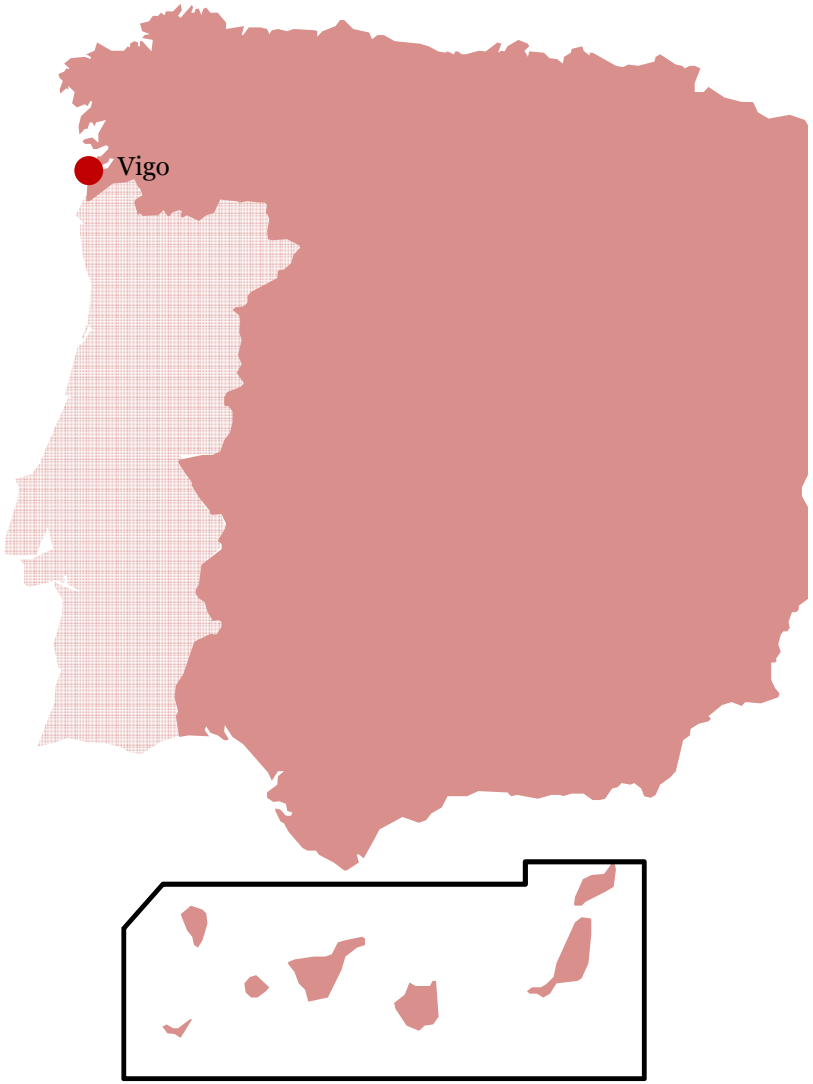
Spanish deep sea fisheries at a glance (2/2)

Works of Punzon et al. (2011) regarding deep water fishing tactics of the spanish fleet in the Northeast Atlantic identify mainly 2 types of deep-water tactics by spanish **non freezer** vessels:

- Ones targeting deep-sea species (10 tactics out of the 53 identified);
- Others targeting mixed deep-sea fisheries (4 out of the 53).

They are referenced under:

- 5 Bottom trawlers fisheries respectively in the VI, VII, VIIIabde, VIIIc+IXaNorth and Ixa North
- 2 pair trawlers fisheries in the VI VII VIIIabde and VIIIc Ixa North
- 3 longliner fisheries in the VI VII VIII abde, VIIIc IXa North and Ixa south
- 3 gillnet fisheries in the VI VII VIIIabde, VIIIc + IXa North, IXa South

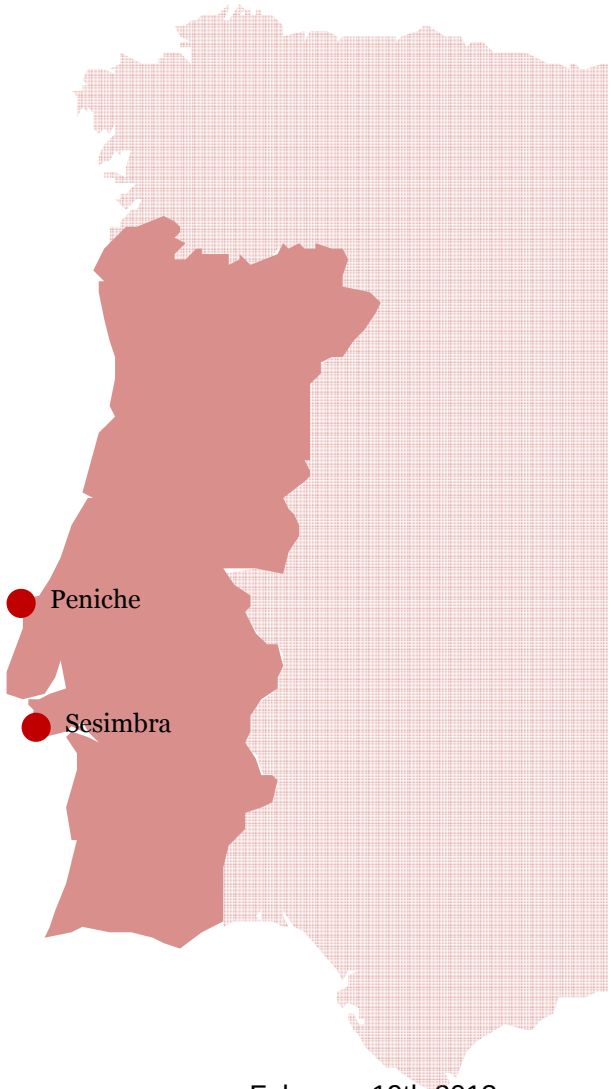


Portuguese deep sea fisheries at a glance

In the Portuguese EEZ there is a long-line- fishery for Black Scabardfish. The members of ADAPI do not fish with trawl inside the Portuguese EEZ. Greenland Halibut is caught by the North Atlantic freezer trawlers in the NAFO area.

Significant fleets are registered in Sesimbra and Peniche. Landings and fishing fleets also exist in Azores and Madeire.

Deep sea species and Annexe 2 species - Catches in 2011 (tons)				
Species	Portugal	Continent	Azores	Madeire
Black Scabardfish	5 556	3 475	139	1 941
Conger	1 871	1 441	426	4
Greater korkbeard	831	487	331	13
Black spot seabream	721	96	624	1
Norway redfish	465	158	303	4
Wreckfish	420	152	266	2
Beryx	247	21	226	
TOTAL catches	**10 111**	**5 830**	**2 315**	**1 965**

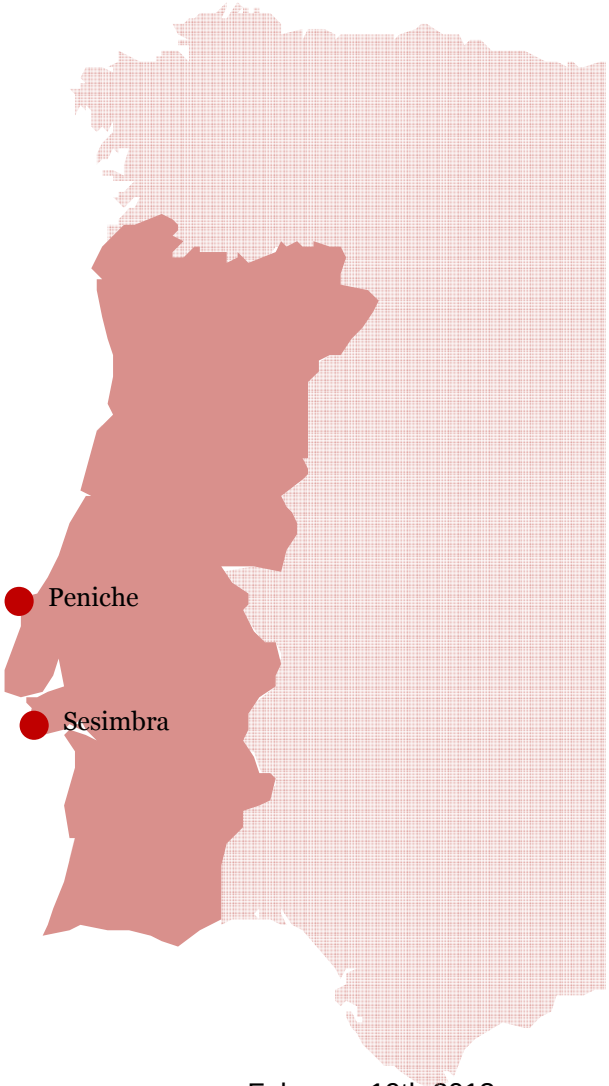


Source: ADAPI

Portuguese deep sea fisheries at a glance (2/2)

Species (tons)	2006	2007	2008	2009	2010	2011
Alépocéphale de Baird – Baird's slickhead	:	:	:	0	:	:
Lingue bleue – Blue ling	5	15	22	26	:	:
Sébaste chèvre – Blackbelly Rosefish	320	490	421	450	306.2	348
Sabre noir – Blackscabard fish	4 868	5 691	6 003	5 214	4 663.9	4 867
Phycis de fond – Greater Forkbeard	29	27	28	32	22.6	23
Flétan noir – Greenland Halibut	2 116	1 497	1 637	1 592	1 786	2 373
Lingue – Ling	:	:	2	:	:	0
Grenadier de roche – Roundnose Grenadier	31	15	11	4	7.3	46
TOTAL landings	**7369**	**7735**	**8124**	**7318**	**6786**	**7657**

Source: Eurostat fish_ca_atl272



For **Blackscabbard** fish, in 2009 in Sesimbra, the fleet was about 17 vessels with **121 crew members** and approximately **112 land based employees plus 41 processing employees.**

Total family dependent population was estimated around 1100 people.

For Greenland Halibut, in 2007 the Portuguese fleet consisted of 13 freezing trawlers. Processing is made onboard and Portugal exports the majority of its Greenland halibut through brokers.

Source: ADAPI

UK- deep sea fisheries at a glance

There is a little directed fishery for tusk, blue-ling and ling by UK vessels. The catches are generally **by-catches** (eg longliners targeting hake bycatch ling and blue ling, or scottish trawlers targeting monk) in other fisheries and they have lately been on the increase. The catches are landed in ports all around UK. They are mostly sold fresh and exported. (UK does not have a salting/klipfish-industry).

Around 20 UK vessels fish the majority of the Ling-quantity. UK fishermen use trawl as dominant fishing gear.

Species	2012
Tusk	117
Ling	2 564
Blue Ling	47
Greenland Halibut	67
Argentines	5
Black scabbard	34
TOTAL landings in tons	**2 834**

West of the Hebrides we find one of the most important ling, blue-ling and tusk fishing-area in Europe. The fishing-grounds are mostly harvested by non-UK vessels (French trawlers from Lorient and Boulogne-sur-Mer and Norwegian long-liners from Sogn og Fjordane).

The statistics do not include fish landed i UK ports by other EU vessels and sent in transit to home port

Source: Scottish Fishermen Association

Irish deep sea fisheries at a glance

The level of catches made by Irish vessels on the species Halibut, Ling and Blue Ling are very low. Most catches of these species are taken by Other Member Sates who are fishing in the Irish EEZ. The fishing fleet strongly decreased in the celtic sea to stabilize around 10 vessels (french and spanish)

Species	Vessels from	2009	2010	2011
By decresaing quantities • Blacbelly Rose Fish • Brosme • Grenadier Roundnose	Ireland	29.4	18.9	24.8
• Grenadier Roundnose •Black Scabbardfish	France	452.4	258.3	300
• Blackebelly Rosefish	Spain	273.1	133.9	184.3
	Other	106.4	30.9	18.9
TOTAL catches in tons		**861.3**	**473.9**	**528**

Catch figures for Irish vessels in 2009, 2010 and 2011, (Excl Conger)
Source Sea-Fisheries Control Unit,SFPA HQ, National Seafood Centre

Norwegian deep sea fisheries at a glance (1/2)

The Norwegian long-lining fleet is concentrated in the county of Sogn- og Fjordane (S&F). The fleet has been reduced over the years, but still **32 vessels** are in operation. In normal years 60 % of their income stems from the fishery for ling, blue-ling and tusk west of the Hebrides.

The catch is mainly landed in the Aalesund area in Møre og Romsdal (the county north of S&F) is processed in the traditional salt-fish and klipfish industry.

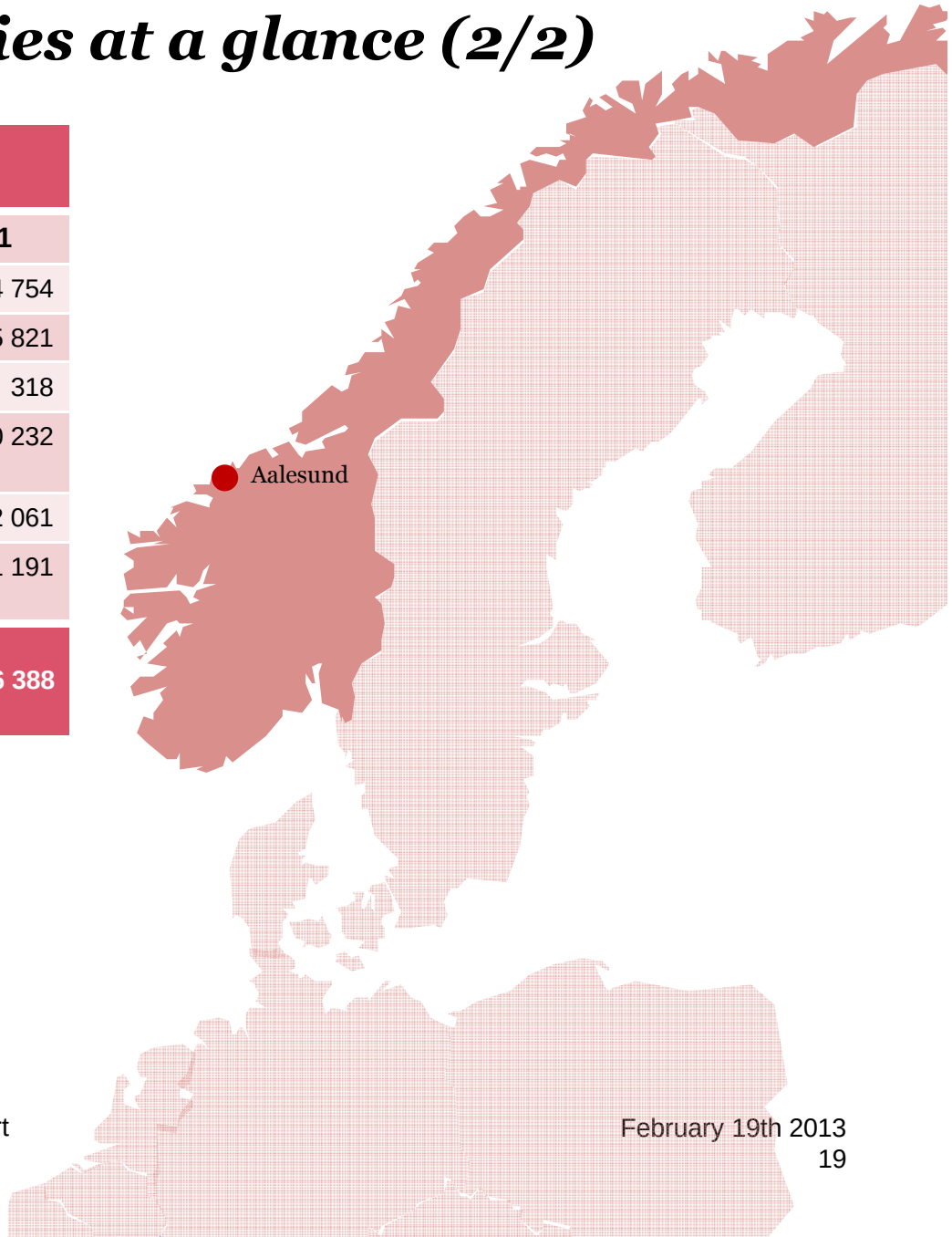
The end consumer will be the Portuguese and Brazilian population.

Norwegian deep sea fisheries at a glance (2/2)

Species	Catches landed by norwegian vessels Measured by tons			
	2008	2009	2010	2011
Tusk	16 197	13 763	17 013	14 754
Ling	19 479	16 716	18 413	15 821
Blue Ling	407	392	526	318
Greenland Halibut	9 017	10 176	9 789	10 232
Argentines	13 428	13 579	12 871	12 061
Miscellaneous	2 439	3 166	1 922	1 191
TOTAL in catches in tons	62 975	59 801	62 544	56 388

Source: PwC Norway

According to Norwegian statistics, one fisherman generates work for five others down the value chain to the consumer.



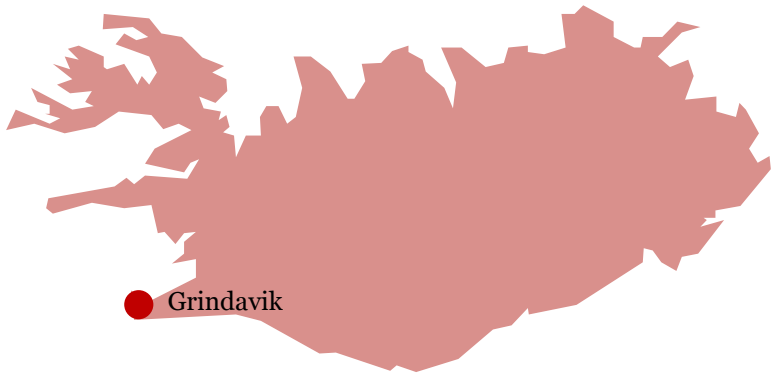
Icelandic deep sea fisheries at a glance

The Icelandic fishery of tusk, ling and blue-ling is predominantly a Long-line fishery. It takes place to the south and west of the island and the main landing places are the ports of Grindavik and Vestmanna (Faroe Islands). The fish is mainly exported fresh or frozen.
There were about **120 Vessels** targeting Tusk, Ling and Blue Ling in the recent years

Greenland halibut is mainly trawled in the continental slope between Iceland and Greenland. The catches are landed in the ports all over the Island, with Akureyri and Hafnafjørdur as an important landing places.

Greenland halibut has economic importance due to the high price per kilo.

Iceland has a yearly catch of silver smelt of between 4-8000 tons. In 2010 it was 16000 tons and in 2011 it was 10 000 tons.



Species	Catches landed by icelandic vessels Measured by tons			
	2008	2009	2010	2011
Tusk	8 175	8 252	8 976	7 390
Blue Ling	3 758	4 223	6 900	6 497
Ling	9 288	10 942	11 130	9 557
Greenland halibut	11 859	15 782	14 128	14 072
TOTAL catches in tons	**35 088**	**41 208**	**43 144**	**39 527**

Source: State of Marine stocks in Icelandic Waters 2011/2012. Marine Research Institute (Iceland), 2012

Faroe Islands deep sea fisheries at a glance

The deep sea species represented 25% of the total catch of ground-fish in the Faroe Islands in 2012, and the export value was 30% of total export value.

Basically, there is a directed fishery for deep-sea species (13 bottom trawlers + Norwegian and EU vessels following bilateral agreements). Since the Faroe islands are practicing a fishing-day system instead of a TAC-system, deep sea species will also appear as by-catch in other directed fisheries.

Ling, blue ling and tusk is mainly fished by line, Greenland Halibut is fished by line or trawl, and silver smelt is fished by trawl.

Species	Tons 2012
Greater Silver Smelt	12 280
Ling	5 035
Blue Ling	1 012
Tusk	3 254
Greenland Halibut	1 793
TOTAL landings in tons	23 374

Source:Felagið Nótaskip otaskip@notaskip.fo

Identified fleet

Country	Number	Comment
France	32	Number of licences, the number of vessels vessels targeting deep-sea species is lower
Spain	35 freezer + fresh fish vessels	Number of fresh vessels non identified
Portugal	30	17 in sesimbra, 13 freezer, number of longliners in the azores not identified
Norway	32	
Iceland	120	

Section 2
The framework

1. Quotas
2. PPS and other fishing management tools
3. Bycatches, discards and quota games
4. EC proposal and its direct, indirect and induced impacts

A fishery ruled by NEAFC & European entities

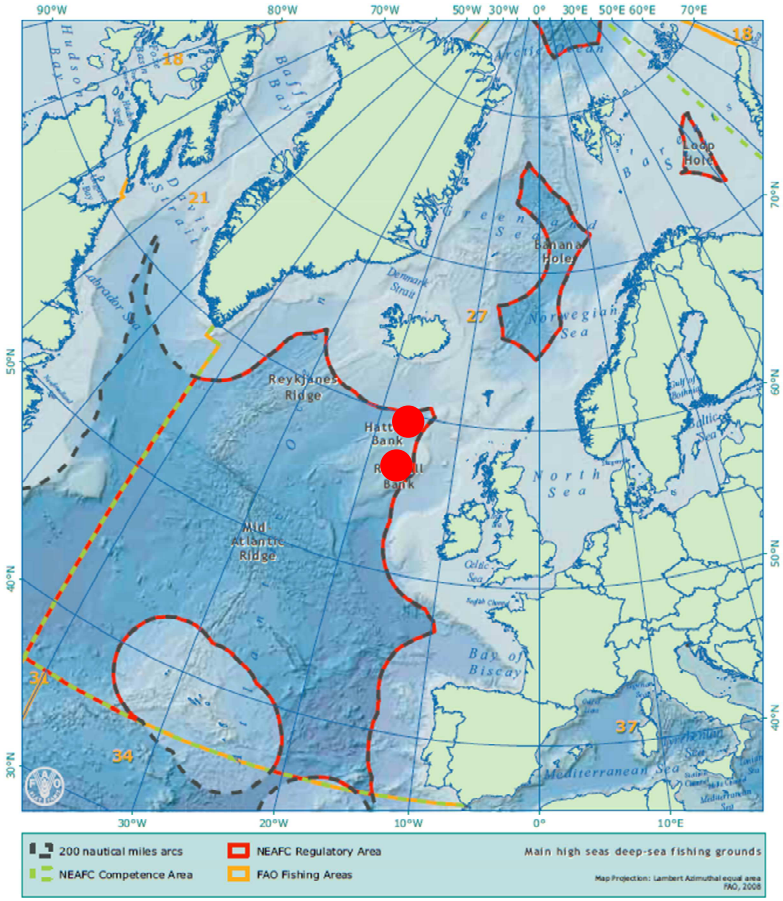
Vessels operating in international waters are identified under the FAO UNGA 61/105 Resolution (Management of Deep-Sea Fisheries). According to the FAO figures, 177 vessels are registered to have deep sea related activities, and amongst them 75 are French or Spanish. Spanish vessels are described as all trawlers when French ones' are composed by 23 trawlers, 6 Gillnetters, 1 Lift netters and 1 Seiner.

Amongst the French and Spanish vessels, 35-40 vessels are fishing near the Hatton and Rockall banks (spoted in red on the map). "Other countries such as Poland (until 2004), Lithuania, Estonia and the Russian Federation also participate in this fishery, but with a limited number of vessels"*

Into European waters, adding to the general European requirements, current regulation implies:

1. Dedicated TACs and Quotas to some deep sea species,
2. A number of vessels that cannot grow (numerus clausus)
3. A dedicated licence system
4. A Compulsory scientific follow-up

The fleet is also composed by Spanish and French vessels, but also includes other fisheries such as the Portuguese one



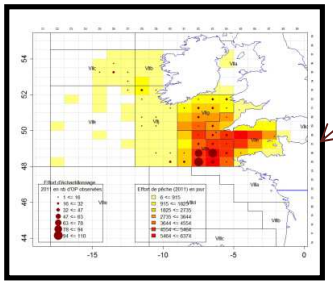
MAP 1
High seas deep-sea fishing grounds in the North East Atlantic Ocean

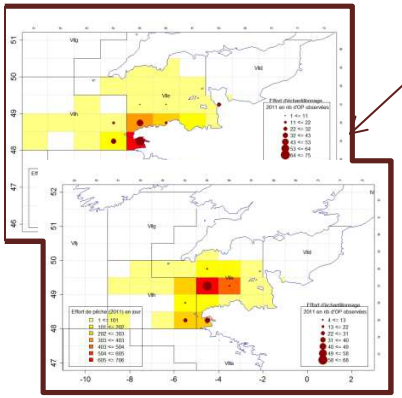
Source : FAO

* Worldwide review of bottom fishreies in the high seas, FAO 2008

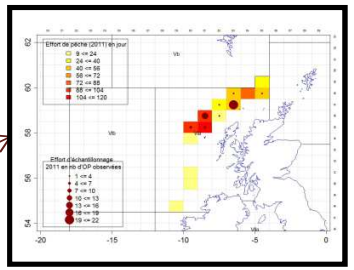
Bycatches, discards and quota games, and sensitivity to hypothesis [1/2]

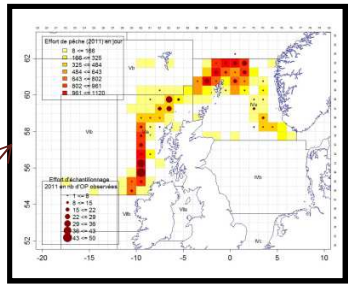
The European Parliament voted for the end of the discards on the beginning of February 2013. We do not yet have access to the details of the setting up of this rule that shall apply from the beginning of 2014, but combined to the TAC & Quotas system there shall be strong by side effects. The current EC proposal would obviously affect the 33-46 meters trawlers to the west of Scotland, but effects might be anticipated for:

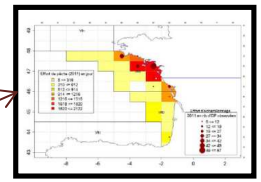




- 138 Artisanal trawlers > 18 meters targeting Cod and Haddock by catch 2,3% of Ling.
- 2 Long liners (2 vessels) in the west of Scotland that target Hake (92% of the catches) by catch Ling (5% of the catches)
- Some of the 197 < 15 meters netters and some of the 23 > 15 meters netters which both target Monkfish catch tons by catch 1% of Ling.
- 19 Trawlers in the west of Scotland targeting demersal species (83% of the catches are Saithe or Hake) by catch Greater Argentine (1/3 of discards) and Ling. Together, those 2 species make 3,8% of the catches, making 460 tons. When targeting Saithe, by catches are less important (>1%, for > 120 tons).
- In a very smaller extent; 245 Coastal Long liners in the Biscay Bay fish 4 167 tons. Amongst the catches are 16 tons of conger. **All considered, the EC proposal shall have impacts in France on the employment linked to app. 350 vessels.**







Bycatches, discards and quota games, and sensitivity to hypothesis [2/2]

All those results must be considered with much precaution :

- They take into account the EC proposal and not the amendments made;

- The definition of deep sea fishing seems not to be stabilized, would it be in terms of species (ling, conger) or deepness;

- For those reasons, an impact assessment for the EC proposal such as the one presented upward shall be considered with the highest provisions.

Section 3
Social and Economic Impact assessment feasibility

1. Required data
2. Available data
3. Cost of the collection effort

EC proposal and its direct, indirect and spill-over effects

As any sector of the economy, deep sea fishery industries generate output, employment and household incomes. They do so both directly through output and employment within the fishery industry itself, and indirectly through the output and employment generated in sectors which supply goods and services to, or use goods and services from, deep sea fishery industries. These are the direct and indirect effects.

The analysis should also take into account the effects of a change in household income, *i.e.* the spill-over effects. Deep sea fishery industries when they expand or contract their level of activity, need more or less of the input labour, and consequently increase or decrease household income. This will in turn trigger a change in household expenditure. Due to the interdependence of the economy, the change in household demand will induce industries to increase or decrease their output, thereby changing the incomes accruing to households, who in turn will further change their expenditures, and so on.

EC proposal and its direct, indirect and spill-over effects

In order to estimate the socioeconomic effects of the EC proposal for deep sea fisheries, multipliers are a useful tool : they measure the total change in an economy resulting from a direct change in final demand from, or supply to, a particular industry, namely the deep sea fishery industries.

Backward multipliers assess the effects upstream in the supply chain. They measure the total effect on the economy as it adjusts to changes in deep sea fisheries demand.

Forward multipliers account for the effects downstream in the supply chain. They measure the total effect on the economy as deep sea fisheries supply change.

Required data

The following table summarizes the data that allow the computation of output and employment multipliers.

They describe both the local economy and the deep sea fishing industry.

The assessment of their availability is a necessary preliminary step.

Socio economic impact study like the one performed in Lorient will necessitate data

ITEM	
Données économiques	
Taux d'épargne des ménages	Household saving rate
Revenu des ménages	Household incomes (Total wages of the zone)
Nombre de ménages de la zone concernée	Number of households
Part du revenu dépensé sur place	Household local expenses (% on the household income)
Impôts et taxes (entreprises)	Taxes on expenditures
Nombre d'emplois	Number of jobs
Nombre d'emplois marins pêcheurs	Number of fishermen
Nombre d'emplois mareyage	Number of primary processing jobs
Nombre d'emplois transformation	Number of secondary processing jobs
Nombre d'emplois activités annexes	Number of other jobs (kind of jobs in comments)
Chiffre d'affaires toutes activités confondues de la zone	Total turnover of the zone (total sales, all sectors)
Part du CA réalisé sur zone	Share of local turnover in the whole one (part of local sales in total sales)
Résultats d'exploitation de la zone	Total operating results (or gross profit incl. depreciation and taxes on production)
Dotation amortissements	Total depreciation
Montant des approvisionnements réalisés à l'extérieur	Outside expenses
CA pêche de grands fonds	Deep sea fishing turnover
part du CA réalisé sur zone	Local share of turnover
Impôts et taxes	Taxes on expenditures
Frais de personnel	Labour costs, Crew costs (Crew share in the value of landings)
Part du personnel habitant sur place	Share of personnal living in the zone
Part des dépenses réalisées par le personnel sur place	Share of local expenses made by the personnel
Données de cadrage	
Description de la chaine de valeur	Description of the value chain
Description de la zone d'analyse pertinente	Description of the relevant zone (district? City ?)

Available data

A network of European fishery economists has assessed the feasibility of output and employment multiplier computation for the EU zones involved in the deep sea fishing industry.

The following tables give an overview of data availability.

A lot of data will be available through Eurostat and national statistics. When it will not, the experts will be able to make trustable estimates from specialized publications and local data providers.

The experts are located in the UK, Portugal and Spain. The team is coordinated by the expert who computed the multipliers for Lorient in 2012 to ensure methodology homogeneity .

Available data

Data	Availability
Household saving rate	*Data fully available in all zones*
Household incomes (Total wages of the zone)	*Data fully available in all zones*
Number of households	*Data fully available in all zones*
Household local expenses (% on the household income)	*Data partially available in soome zones. If the data is not available, it can be estimated through survey*
Taxes on expenditures	*Data fully available in all zones*
Number of jobs	*Data fully available in all zones*
Number of primary processing jobs	*Data not available, an estimate can be made through survey of stakeholders*
Number of secondary processing jobs	*Data not available, an estimate can be made through survey of stakeholders*

Available data

Data	Availability
Number of secondary processing jobs	*If not can make estimate*
Number of other jobs (kind of jobs in comments)	*If not can make estimate*
Total turnover of the zone (total sales, all sectors)	*Can estimate*
Share of local turnover in the whole one (part of local sales in total sales)	*Yes*
Total operating results (or gross profit incl. depreciation and taxes on production)	*Yes*

Available data

Data	Availability
Total depreciation	*Yes*
Outside expenses	*Yes*
Deep sea fishing turnover	*Can estimate from landings and prices*
Local share of turnover	*Can estimate*
Taxes on expenditures	*Yes*
Labour costs, Crew costs (Crew share in the value of landings)	*Data is hardly available, but can be estimated from STECF publications*
Share of personnal living in the zone	*Can get estimate with phone call*
Share of local expenses made by the personnel	*Data is not available, but key stakeholders can be adressed with this issue*

Other issues

Data	Availibility
Total depreciation	*Yes*
Outside expenses	*Yes*

Description of the value chain

Description of the relevant area

A sensitivity analysis will examine the effects of changes in the main variables to take into account the underlying uncertainty of estimates.

Estimation of the cost of collection effort

The Uk	8 100 €
Ireland	5 900 €
Spain	8 400 €
Portugal	8 400 €
Coordination (Brittany)	10 800 €
Overheads (meeting rooms)	1 000 €
Total (excl VAT)	42 600 €
VAT (19,6 %)	8 350 €
Total (incl. VAT)	50 950 €

This proposal includes 3 meetings involving the experts and the coordinator (the same expert is in charge of the UK and Ireland)

Appendix 1
Appendix

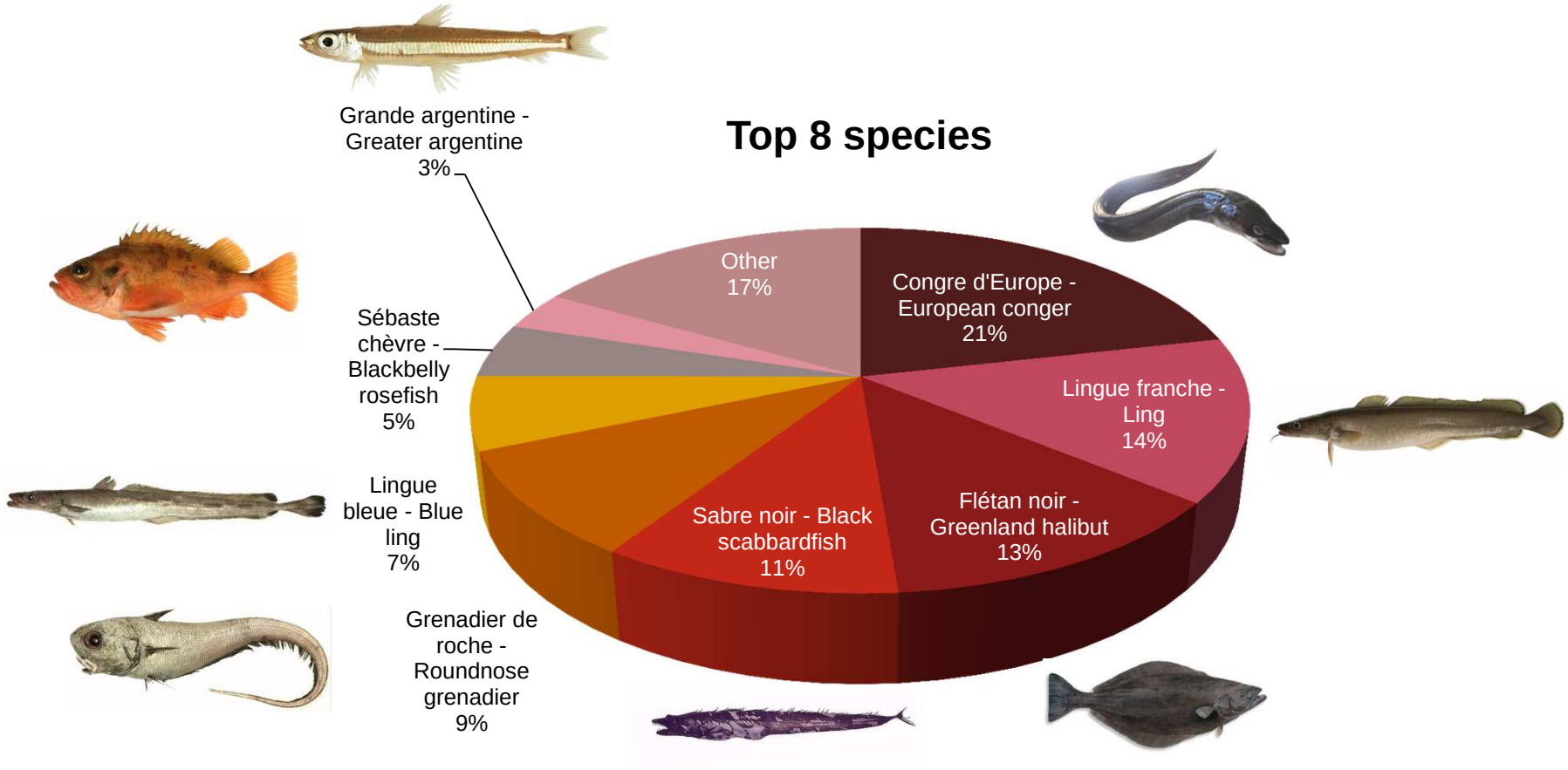
Deep sea species – Quantities in tons – EU only (2008-2011) (1/2)

code	Sci Name	Species	Total in tons	% of total
COE	Conger conger	Congre d'Europe - European conger	38172	21.46%
LIN	Molva molva	Lingue franche - Ling	25692	14.45%
GHL	Reinhardtius hippoglossoides	Flétan noir - Greenland halibut	22778	12.81%
BSF	Aphanopus carbo	Sabre noir - Black scabbardfish	18640	10.48%
RNG	Coryphaenoides rupestris	Grenadier de roche - Roundnose grenadier	16651	9.36%
BLI	Molva dypterygia	Lingue bleue - Blue ling	11542	6.49%
BRF	Helicolenus dactylopterus	Sébaste chèvre - Blackbelly rosefish	8531	4.80%
ARU	Argentina silus	Grande argentine - Greater argentine	6060	3.41%
GFB	Phycis blennoides	Phycis de fond - Greater forkbeard	4984	2.80%
ALC	Alepocephalus bairdii	Alépocéphale de Baird - Baird's slickhead	4953	2.79%
SBR	Pagellus bogaraveo	Dorade rose - Blackspot(=red) seabream	4211	2.37%
WRF	Polyprion americanus	Cernier commun - Wreckfish	3276	1.84%
SFS	Lepidopus caudatus	Sabre argenté - Silver scabbardfish	3062	1.72%
RHG	Macrourus berglax	Grenadier berglax - Roughhead grenadier	2532	1.42%
USK	Brosme brosme	Brosme - Tusk(=Cusk)	1868	1.05%
KEF	Chaceon affinis	Crabe rouge de profondeur - Deep-sea red crab	1017	0.57%
CYO	Centroscymnus coelolepis	Pailona commun - Portuguese dogfish	1000	0.56%
SYR	Scymnodon ringens	Squale-grogneur commun - Knifetooth dogfish	617	0.35%
GUQ	Centrophorus squamosus	Squale-chagrin de l'Atlantique - Leafscale gulper shark	460	0.26%
RIB	Mora moro	Moro commun - Common mora	429	0.24%
ALF	Beryx spp	Béryx nca - Alfonsinos nei	267	0.15%
ORY	Hoplostethus atlanticus	Hoplostète orange - Orange roughy	261	0.15%
SHO	Galeus melastomus	Chien espagnol - Blackmouth catshark	239	0.13%
EPI	Epigonus telescopus	Poisson cardinal - Black cardinal fish	152	0.09%
DCA	Deania calcea	Squale savate - Birdbeak dogfish	109	0.06%
GUP	Centrophorus granulosus	Squale-chagrin commun - Gulper shark	88	0.05%
CMO	Chimaera monstrosa	Chimère commune - Rabbit fish	82	0.05%
CYP	Centroscymnus crepidater	Pailona à long nez - Longnose velvet dogfish	70	0.04%
SCK	Dalatias licha	Squale liche - Kitefin shark	24	0.01%
ETR	Etmopterus princeps	Sagre rude - Great lanternshark	20	0.01%
TJX	Trachyscorpia cristulata	- Atlantic thornyhead	15	0.01%
HPR	Hoplostethus mediterraneus	Hoplostète argenté - Mediterranean slimehead	14	0.01%
GAM	Galeus murinus	Chien islandais - Mouse catshark	13	0.01%
SBL	Hexanchus griseus	Requin griset - Bluntnose sixgill shark	10	0.01%
RJG	Raja hyperborea	Raie arctique - Arctic skate	4	0.00%
GSK	Somniosus microcephalus	Laimargue du Groenland - Greenland shark	1	0.00%

In yellow colour – species regulated in NEAFC in addition

Catches of fish, crustaceans, molluscs and other aquatic organisms by species and fishing area **for EU countries only (in live weight equivalent)**. **Total of years 2008, 2009, 2010, 2011.**
The data refer to the catch of freshwater, brackish water and marine species of fish, crustaceans, molluscs and other aquatic animals and plants, killed, caught, trapped or collected for all commercial, industrial, recreational and subsistence purposes.
Source: Eurostat, analysis PwC

Deep sea species – Quantities in tons – EU only (2008-2011) (2/2)



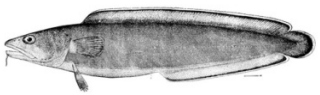
Deep sea species – Quantities in tons – EU and associated countries (2008-2011) (1/2)

code	Sci_name	Species	Total	% of total
LIN	Molva molva	Lingue franche - Ling	123172	21.08%
GHL	Reinhardtius hippoglossoides	Flétan noir - Greenland halibut	111469	19.08%
COE	Conger conger	Congre d'Europe - European conger	76348	13.07%
USK	Brosme brosme	Brosme - Tusk(=Cusk)	71250	12.20%
BLI	Molva dypterygia	Lingue bleue - Blue ling	38561	6.60%
BSF	Aphanopus carbo	Sabre noir - Black scabbardfish	37389	6.40%
RNG	Coryphaenoides rupestris	Grenadier de roche - Roundnose grenadier	33484	5.73%
BRF	Helicolenus dactylopterus	Sébaste chèvre - Blackbelly rosefish	17062	2.92%
ARU	Argentina silus	Grande argentine - Greater argentine	14634	2.50%
GFB	Phycis blennoides	Phycis de fond - Greater forkbeard	11534	1.97%
ALC	Alepocephalus bairdii	Alépocéphale de Baird - Baird's slickhead	9906	1.70%
SBR	Pagellus bogaraveo	Dorade rose - Blackspot(=red) seabream	8422	1.44%
WRF	Polyprion americanus	Cernier commun - Wreckfish	6552	1.12%
SFS	Lepidopus caudatus	Sabre argenté - Silver scabbardfish	6124	1.05%
RHG	Macrourus berglax	Grenadier berglax - Roughhead grenadier	5247	0.90%
SFV	Sebastes viviparus	Petit sébaste - Norway redfish	2601	0.45%
KEF	Chaceon affinis	Crabe rouge de profondeur - Deep-sea red crab	2034	0.35%
CYO	Centroscymnus coelolepis	Pailona commun - Portuguese dogfish	2000	0.34%
SYR	Scymnodon ringens	Squale-grogneur commun - Knifetooth dogfish	1234	0.21%
GUQ	Centrophorus squamosus	Squale-chagrin de l'Atlantique - Leafscale gulper shark	920	0.16%
RIB	Mora moro	Moro commun - Common mora	858	0.15%
CMO	Chimaera monstrosa	Chimère commune - Rabbit fish	690	0.12%
ALF	Beryx spp	Béryx nca - Alfonsinos nei	534	0.09%
ORY	Hoplostethus atlanticus	Hoplostète orange - Orange roughy	522	0.09%
SHO	Galeus melastomus	Chien espagnol - Blackmouth catshark	491	0.08%
EPI	Epigonus telescopus	Poisson cardinal - Black cardinal fish	304	0.05%
DCA	Deania calcea	Squale savate - Birdbeak dogfish	218	0.04%
GUP	Centrophorus granulosus	Squale-chagrin commun - Gulper shark	176	0.03%
CYP	Centroscymnus crepidater	Pailona à long nez - Longnose velvet dogfish	140	0.02%
GSK	Somniosus microcephalus	Laimargue du Groenland - Greenland shark	112	0.02%
SCK	Dalatias licha	Squale liche - Kitefin shark	48	0.01%
ETR	Etmopterus princeps	Sagre rude - Great lanternshark	40	0.01%
TJX	Trachyscorpia cristulata	- Atlantic thornyhead	30	0.01%
HPR	Hoplostethus mediterraneus	Hoplostète argenté - Mediterranean slimehead	28	0.00%
GAM	Galeus murinus	Chien islandais - Mouse catshark	26	0.00%
SBL	Hexanchus griseus	Requin griset - Bluntnose sixgill shark	20	0.00%
ETX	Etmopterus spinax	Sagre commun - Velvet belly	9	0.00%
RJG	Raja hyperborea	Raie arctique - Arctic skate	8	0.00%

In yellow colour – species regulated in NEAFC in addition

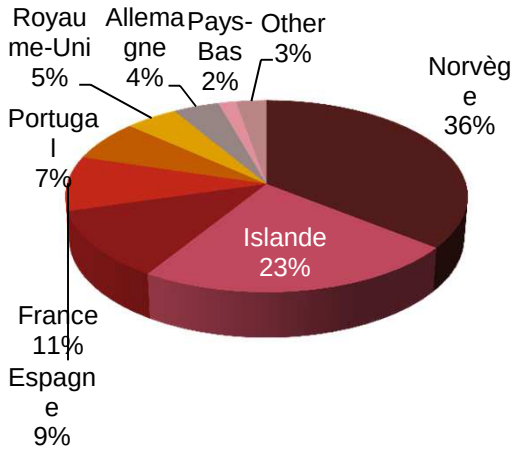
Catches of fish, crustaceans, molluscs and other aquatic organisms by species and fishing area **for EU countries and associated countries (in live weight equivalent). Total of years 2008, 2009, 2010, 2011.**
The data refer to the catch of freshwater, brackish water and marine species of fish, crustaceans, molluscs and other aquatic animals and plants, killed, caught, trapped or collected for all commercial, industrial, recreational and subsistence purposes.
Source: Eurostat, analysis PwC

Deep sea species – Quantities in tons – EU and associated countries (2008-2011) (2/2)



Deep sea species – Catches by countries (2006-2009)

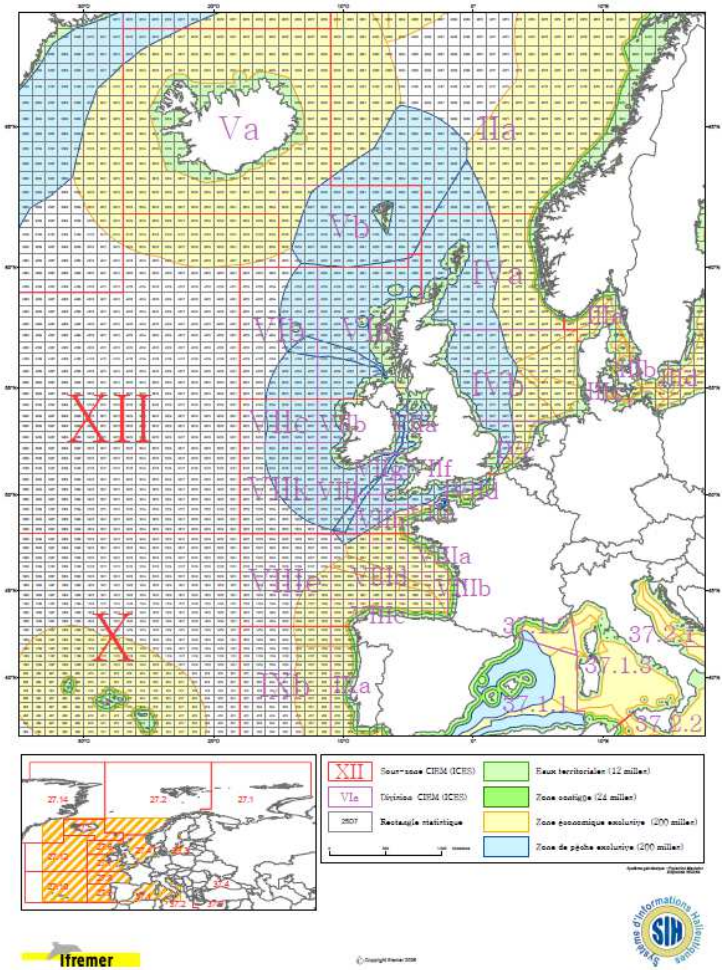
	Deep-sea species	Species regulated in NEAFC in addition	Total général	% UE27	% total
Allemagne (incluant l'ancienne RDA à partir de 1991)	20 560	395	20 955	10%	4%
Belgique	-	476	476	0%	0%
Danemark	399	2 869	3 268	2%	1%
Espagne	17 541	28 340	45 881	22%	9%
Estonie	32	-	32	0%	0%
France	28 631	29 305	57 936	28%	12%
Guernesey et Jersey (îles Anglo-Normandes)		275	275	0%	0%
Île de Man		-	-	0%	0%
Irlande	950	3 211	4 161	2%	1%
Pays-Bas	8 055	8	8 063	4%	2%
Pologne	5 445	-	5 445	3%	1%
Portugal	27 209	7 185	34 394	17%	7%
Royaume-Uni	6 541	17 417	23 958	12%	5%
Suède	-	175	175	0%	0%
Union européenne (27 pays)	115 363	89 656	205 019	100%	41%
Islande	60 510	55 143	115 653		23%
Norvège	46 963	131 124	178 087		36%
Espace économique européen (EEE)	223 063	275 703	498 766		100%



Catches of fish, crustaceans, molluscs and other aquatic organisms by species and fishing area for EU and associated countries **(in live weight equivalent)**. **Total of years 2006, 2007, 2008, 2009.**
The data refer to the catch of freshwater, brackish water and marine species of fish, crustaceans, molluscs and other aquatic animals and plants, killed, caught, trapped or collected for all commercial, industrial, recreational and subsistence purposes.
Source: Eurostat, analysis PwC

SIH Map

Zones réglementaires de l'Atlantique Nord-Est
et de la Méditerranée (Zones FAO 27 & 37)



Closing statement